Unit 3: Family Letter

Home Link 2-14

NAME DATE TIME

Fraction Concepts, Addition, and Subtraction

In Unit 3 students extend fraction concepts from prior grades to new fraction topics. They continue to explore and strengthen fraction concepts by working with the fraction circle pieces they used in Grades 3 and 4. Fraction circle pieces are circles divided into equal-size pieces, with each size representing a different unit fraction and all the same-size pieces the same color.

The unit begins with students solving fair share number stories that result in fractions as answers. For example: *There are 5 people who want to share 3 apples equally. How much apple does each person get?* Students use fraction circle pieces and draw pictures to help them solve these types of problems: *Each person gets* $\frac{3}{5}$ *apple.* They use fair share stories to understand the connections between fractions and division. For example, the number story above shows that $\frac{3}{5}$ is the same as $3 \div 5$. Students apply this understanding to report the remainders in whole-number division problems as fractions.

Students also review how to place fractions on a number line and use number lines to help them think about relative sizes of fractions. For example, $\frac{5}{8}$ is a little more than $\frac{1}{2}$, so $\frac{5}{8}$ is a little to the right of $\frac{1}{2}$ on a number line. Developing fraction number sense in this way helps students estimate sums and differences of fractions. For example, since $\frac{5}{8}$ is a little more than $\frac{1}{2}$, $1\frac{1}{2} - \frac{5}{8}$ must be a little less than 1.

Students often struggle learning how to compute with fractions. This is probably because the rules for computing with fractions can seem very different from the rules they use for whole numbers. To help students overcome this challenge, the activities and representations in this unit have students build mental images of fractions. Developing a firm sense of what fractions mean and how they are interrelated helps students make sense of fraction computation procedures and judge the reasonableness of their answers.

In the second half of Unit 3 students explore strategies for adding and subtracting fractions and mixed numbers. They use fraction circle pieces to see how fractions can be put together to form a whole and how wholes can be broken apart into fractions. They also apply their knowledge of equivalent fractions and adding fractions with like denominators to generate strategies for adding fractions with unlike denominators.

Examples:

When I put $\frac{2}{3}$ and $\frac{2}{3}$ together, I can make a group of $\frac{3}{3}$, which is the same as 1. There is 1 more third left, so $\frac{2}{3} + \frac{2}{3} = 1\frac{1}{3}$.

To take away $\frac{3}{4}$ from $1\frac{1}{4}$, I can trade 1 whole for 4 fourths. Now I have 5 fourths. After I take away 3 fourths, 2 fourths are left. So $1\frac{1}{4} - \frac{3}{4} = \frac{2}{4}$.

How can I solve $\frac{1}{4} + \frac{1}{8}$? I know $\frac{1}{4} = \frac{2}{8}$, so $\frac{1}{4} + \frac{1}{8}$ is the same as $\frac{2}{8} + \frac{1}{8}$, which is $\frac{3}{8}$.

Note that the strategies students use to add and subtract fractions in this unit are exploratory and informal. In a later unit students will be introduced to formal rules for adding and subtracting fractions with unlike denominators.

Unit 3 ends with two lessons about solving fraction-of problems like these: *What is $\frac{1}{2}$ of 8? What is $\frac{1}{3}$ of 7?* Students use counters and drawings to model and solve the problems in activities that build a foundation for multiplying fractions by whole numbers. In a later unit students will learn that "of" means "times," so the answer to *What is $\frac{1}{2}$ of 8?* is also the answer to the problem $\frac{1}{2} * 8$.

Please keep this Family Letter for reference as your child works through Unit 3.

Vocabulary

Important terms in Unit 3:

argument An explanation that shows why a claim or *conjecture* is true or false using words, pictures, symbols, or other representations. For example, if a student makes a conjecture that $\frac{1}{2} + \frac{3}{5} = \frac{4}{7}$ is not true, the student might support that conjecture by arguing that $\frac{3}{5}$ is more than $\frac{1}{2}$, so the answer to $\frac{1}{2} + \frac{3}{5}$ is greater than 1. Since $\frac{4}{7}$ is less than 1, $\frac{1}{2} + \frac{3}{5} = \frac{4}{7}$ must not be true.

benchmark A number that can be used as a reference point when estimating or evaluating the reasonableness of calculations. The numbers 0, $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, and so on are useful benchmarks when calculating with fractions. For example, the definition of *argument* given above uses $\frac{1}{2}$ and 1 as benchmarks.

conjecture In mathematics, a claim or prediction that has not been proved. For example, given the number sentence $\frac{1}{2} + \frac{3}{5} = \frac{4}{7}$, a student might make a conjecture that the number sentence is not true using what they know about *benchmarks*.

denominator The number below the line in a fraction. In a fraction representing a whole divided into equal parts, the denominator is the total number of equal parts. In the fraction $\frac{3}{5}$, 5 is the denominator.

equivalent fractions Fractions that name the same number. For example, $\frac{1}{2}$ and $\frac{4}{8}$ are equivalent fractions.

fraction greater than 1 A fraction with a *numerator* that is greater than its *denominator*. For example, $\frac{4}{3}$, $\frac{5}{2}$, and $\frac{24}{12}$ are fractions greater than 1. Fractions greater than 1 are sometimes called "improper fractions," but *Everyday Mathematics* does not use this term.

fraction-of problem A problem that requires finding a fraction of a whole. For example, *What is $\frac{1}{2}$ of 12?* is a fraction-of problem.

mixed number A number that is written using both a whole number and a fraction. For example, $2\frac{1}{4}$ is a mixed number equal to $2 + \frac{1}{4}$.

numerator The number above the line in a fraction. In a fraction representing a whole divided into equal parts, the numerator is the number of equal parts that are being considered. In the fraction $\frac{3}{5}$, 3 is the numerator.

Do-Anytime Activities

To work with your child on the key concepts in this unit, try some of these activities.

1. Help your child find fractions in the everyday world. For example, fractions are often found in advertisements, on measuring tools, in recipes, in sports reports, and so on.
2. Make up simple problems for your child to solve about sharing things equally. For example: *If 4 people share 3 oranges equally, how much orange does each person get?*
3. Tell your child a whole number and ask him or her to find $\frac{1}{2}$ of, $\frac{1}{3}$ of, or $\frac{1}{4}$ of the number.

Building Skills through Games

In Unit 3 your child will practice interpreting exponential notation; comparing, multiplying, and dividing whole numbers; and comparing, estimating with, and adding fractions by playing the following games. Detailed instructions for each game are in the *Student Reference Book*. You can play many of these games at home with a regular deck of playing cards by removing the face cards and having the ace represent 1. You might also consider using index cards to create fraction cards. Gameboards and record sheets can be copied for home use.

Build-It See *Student Reference Book*, page 293. Two players need fraction cards and a gameboard for this game. *Build-It* provides practice with comparing fractions and builds fraction number sense.

Division Dash See *Student Reference Book*, page 301. One or two players need number cards for this game. *Division Dash* provides practice with dividing whole numbers.

Multiplication Top-It: Larger Numbers See *Student Reference Book*, page 325. Two to four players need number cards for this game. *Multiplication Top-It: Larger Numbers* provides practice multiplying larger numbers.

Number Top-It See *Student Reference Book*, page 316. Two to five players need number cards, a game mat, and a record sheet for this game. *Number Top-It* builds understanding of whole-number place value.

Power Up See *Student Reference Book*, page 318. Two players need two 6-sided dice and a record sheet for this game. *Power Up* provides practice converting from exponential notation to standard notation and builds awareness of patterns with powers of 10.

Rename That Mixed Number See *Student Reference Book*, page 321. Two players need number cards and a record sheet for this game. *Rename That Mixed Number* provides practice renaming mixed numbers by trading wholes for fractional parts.

As You Help Your Child with Homework

As your child brings assignments home, you might want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through this unit's Home Links.

Home Link 3-1

1. $\frac{2}{6}$, or $\frac{1}{3}$, loaf
2. $\frac{6}{4}$, $1\frac{2}{4}$ or $1\frac{1}{2}$, slices
3. $\frac{3}{2}$, or $1\frac{1}{2}$, fruit bars
4. 7,794
5. 26,271

Home Link 3-2

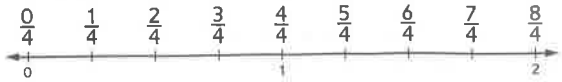
1. $\frac{4}{24}$, or $\frac{1}{6}$ Number model: $4 \div 24 = \frac{4}{24}$, or $\frac{1}{6}$
2. $\frac{7}{2}$, or $3\frac{1}{2}$ Number model: $7 \div 2 = \frac{7}{2}$, or $3\frac{1}{2}$
3. $\frac{10}{3}$, or $3\frac{1}{3}$ Number model: $10 \div 3 = \frac{10}{3}$, or $3\frac{1}{3}$
4. **a.** 60 **b.** 6 **c.** 60
5. **a.** 4 **b.** 400 **c.** 40

Home Link 3-3

1. Quotient: 4; Remainder: 4; 5
2. Quotient: 1; Remainder: 8; $1\frac{8}{16}$, or $1\frac{1}{2}$
3. 26
4. 32
5. 2
6. 10

Home Link 3-4

1. 

2. 

3. 

4. **a.** $\frac{3}{8}$ **b.** $\frac{5}{4}$ **c.** $1\frac{5}{8}$

5. **a.** $1\frac{2}{4}$ **b.** $1\frac{1}{2}$ **c.** $1\frac{5}{8}$

6. **a.** $\frac{4}{2}$ **b.** $\frac{14}{8}$ **c.** $\frac{5}{4}$

7. **a.** 300 **b.** 5,000 **c.** 80,000

8. **a.** $9 * 10^2$ **b.** $6 * 10^3$ **c.** $7 * 10^4$

Home Link 3-5

1. $\frac{(\boxed{4}+\boxed{6})}{(\boxed{2}+\boxed{3})} = \frac{10}{5} = 2$ **2.** Answers vary.

3. **a.** 300,000 **b.** 30,000 **c.** 3,000
d. 300 **e.** 30 **f.** 3

Home Link 3-6

1. Answers vary.

2. Josie's answer is more reasonable.

3. Player 1 won. **4.** $6 \times (4 + 1) = 30$

5. $12 \div (3 \times 2) - 1 = 1$ **6.** $(48 \div 6 + 5) \times 3 = 39$

7. $50 / [(10 + 10) / 2] = 5$

Home Link 3-7

1. 2 **2.** less than 2 **3.–5.** Answers vary.

6. 980; Number model: $980 = 14 \times 7 \times 10$

7. 6,300; Number model: $6{,}300 = 525 \times 12$

Home Link 3-8

1–2. Answers vary.

3. $3\frac{5}{8}$ **4.** $1\frac{10}{4}$ **5.** 3,757 **6.** 648

Home Link 3-9

1. $1\frac{1}{4} + 1\frac{3}{4} = p$; 3 **2.** $4 - 1\frac{1}{2} = r$; $2\frac{1}{2}$

3. $1\frac{2}{3} + 1\frac{2}{3} = c$; $3\frac{1}{3}$ **4.** 139 R9 **5.** 141 R6

Home Link 3-10

1b. $\frac{3}{6}$, or $\frac{1}{2}$; $\frac{3}{6}$, or $\frac{1}{2}$ **2a.** $\frac{1}{2} + \frac{1}{4}$ **2c.** 2; $\frac{3}{4}$; $\frac{3}{4}$

3. Answers vary. **4.** $(10 + 16) / 2$

5. $\frac{2}{3} * 2 + \frac{1}{4}$, or $\left(\frac{2}{3} * 2\right) + \frac{1}{4}$

Home Link 3-11

1. $\frac{6}{5}$; $\frac{2}{1}$; $\frac{4}{2}$, or $\frac{6}{3}$; $\frac{5}{2}$; $\frac{2}{6}$, or $\frac{1}{3}$; $\frac{4}{3}$ **2a.** $\frac{1}{6} + \frac{1}{6}$

2b. Sample answer:
$\frac{1}{2} + \frac{1}{2} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

3. $5 \div 4$; $1\frac{1}{4}$ **4.** $16 \div 8$; $1\frac{8}{8}$, or 2

5. $14 \div 3$; Sample answer: $4\frac{2}{3}$ **6.** $17 \div 12$; $1\frac{5}{12}$

Home Link 3-12

1. $\frac{3}{4}$ mile farther **2.** $1\frac{3}{6}$, or $1\frac{1}{2}$, apples

3. $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$ **4.** 150 cm^3

5. 376 ft^3

Home Link 3-13

1. 12 **2.** 8 **3.** 6 **4.** 9 **5.** 4

6. $132\frac{6}{53}$ **7.** $44\frac{8}{67}$

Home Link 3-14

1. $\frac{7}{2}$, or $3\frac{1}{2}$ **2.** $\frac{7}{3}$, or $2\frac{1}{3}$

3. $\frac{7}{4}$, or $1\frac{3}{4}$ **4.** $\frac{15}{4}$, or $3\frac{3}{4}$

5. $\frac{3}{7}$ **6.** 1,715 **7.** 13,167

Modeling and Solving Fair Share Number Stories

Home Link 3-1

NAME DATE TIME

SRB 163-164

Use a drawing to model each number story. Then solve.

① You are sharing 2 loaves of bread with 5 friends. You want each person to get a fair share. How much bread will each person get?

Model:

Solution: _____

② Betsy and 3 of her friends are splitting a whole watermelon. There are 6 circular slices of watermelon. How many slices of watermelon will each person get?

Model:

Solution: _____

③ Darius and Matthew have 3 fruit bars. They are both hungry after playing football and decide to split the fruit bars evenly. How much fruit bar will each boy get?

Model:

Solution: _____

Practice

Make an estimate and solve. Show your work on the back of this page.

④ 2,598 × 3 Estimate: _____

⑤ 417 × 63 Estimate: _____

Fair Share Problems with Number Models

Home Link 3-2

NAME DATE TIME

Solve each number story. Draw a picture and write a number model to show how you solved each problem.

SRB 163-164

1. Mr. Chu is slicing 4 cantaloupes for his class. There are 24 students in the class. If Mr. Chu cuts the cantaloupes to make an equal portion for each student, how much of a whole cantaloupe will each student get?

   _____ cantaloupe

   Number model: _____

2. Two classrooms are sharing 7 packages of unit cubes. If the packages are split evenly, how many packages will each classroom receive?

   _____ packages

   Number model: _____

3. Jane, Max, and Greg are splitting a 10-ounce bag of popcorn. If they share the popcorn equally, how many ounces of popcorn will each person get?

   _____ ounces

   Number model: _____

Practice

4. **a.** $540 \div 9 =$ _____

   b. $540 \div 90 =$ _____

   c. $5{,}400 \div 90 =$ _____

5. **a.** $320 \div 80 =$ _____

   b. $3{,}200 \div 8 =$ _____

   c. $32{,}000 \div 800 =$ _____

Division Number Stories with Remainders

Home Link 3-3

NAME DATE TIME

For each number story, write a number model with a letter for the unknown. Then solve. You may draw a picture to help. Explain what you did with the remainder.

SRB 44, 113-114

① Ms. Davis's class is having a picnic. There are 27 students in her class. If each picnic table seats 6 people, how many picnic tables will the class need so that all of the students and Ms. Davis have a seat?

Number model: _____

Quotient: _____ Remainder: _____

Answer: They will need _____ tables.

Circle what you did with the remainder.

Ignored it Reported it as a fraction Rounded the quotient up

Why? _____

② Nolan brought 2 boxes of fruit bars to share with his football team. There are 12 bars in each box and 16 people on the team. If the bars are shared equally, how many fruit bars will each person get?

Number model: _____

Quotient: _____ Remainder: _____

Answer: _____

Circle what you did with the remainder.

Ignored it Reported it as a fraction Rounded the quotient up

Why? _____

Practice

Evaluate each expression.

③ $8 + (6 * 3)$ _____

④ $(6 + 2) * (9 - 5)$ _____

⑤ $12 \div [3 * (10 \div 5)]$ _____

⑥ $\{20 \div [7 + (6 \div 2)]\} * 5$ _____

Fractions on a Number Line

Home Link 3-4

NAME DATE TIME

SRB 158-161, 171-173

(1) Divide this number line to show halves. Label each tick mark with a fraction.

(2) Divide this number line to show fourths. Label each tick mark with a fraction.

(3) Divide this number line to show eighths. Label each tick mark with a fraction.

Use the number lines above or the Fraction Number Lines Poster to solve Problems 4–6.

(4) Which number is greater? Circle the greater number in each pair.

a. $\frac{3}{8}$ or $\frac{1}{4}$ **b.** $\frac{2}{2}$ or $\frac{5}{4}$ **c.** $1\frac{5}{8}$ or $\frac{3}{2}$

(5) Rename each fraction as a mixed number.

a. $\frac{6}{4} =$ _____ **b.** $\frac{3}{2} =$ _____ **c.** $\frac{13}{8} =$ _____

(6) Rename each mixed number as a fraction.

a. $1\frac{2}{2} =$ _____ **b.** $1\frac{6}{8} =$ _____ **c.** $1\frac{1}{4} =$ _____

Practice

(7) Write each number in standard notation.

a. $3 * 10^2 =$ _____

b. $5 * 10^3 =$ _____

c. $8 * 10^4 =$ _____

(8) Write each number as a product, using exponential notation.

a. 900 = _____

b. 6,000 = _____

c. 70,000 = _____

More *Fraction Top-It*

Home Link 3-5

NAME DATE TIME

Eddie and his friend are playing another version of *Fraction Top-It*. Each player turns over 4 number cards and places them as the digits on the gameboard. The player with the larger quotient wins the round.

SRB 27-29

Eddie's cards are 2, 6, 3, and 4.

(1) If you were Eddie, how would you place your cards? What is the quotient?

$$\frac{(\square + \square)}{(\square + \square)}$$

(2) What rule can Eddie use to create the largest possible fraction? Explain why this rule works.

Practice

(3) Write the value of the 3 in each of the following numbers.

a. 1,**3**22,072 _____

b. 8,2**3**6,914 _____

c. 5,70**3**,000 _____

d. 4,091,**3**16 _____

e. 8,192,0**3**8 _____

f. 7,025,94**3** _____

Fractions and Number Sense

Home Link 3-6

NAME DATE TIME

SRB 174-176, 181-185

① Josie calculated $\frac{1}{5} + \frac{1}{2}$ and said the answer was $\frac{2}{7}$.

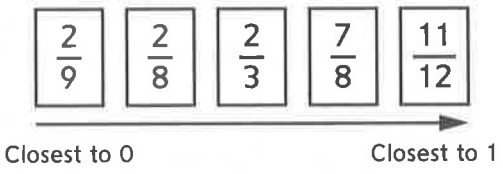
Explain how you know that Josie's answer does not make sense.

Did you need to calculate an exact answer to know that Josie's answer doesn't make sense? Tell someone at home why you did or didn't need to calculate an exact answer.

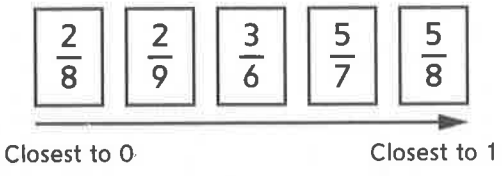
② Renee calculated $\frac{3}{6} + \frac{2}{4}$ and said the answer was $\frac{5}{10}$. Josie solved the same problem and said the answer was 1.

Whose answer is more reasonable? Explain how you know.

③ Two students are playing *Build-It*. To win, all 5 cards must be in order from smallest to largest. Circle the winning set of cards.



Player 1



Player 2

Practice

Insert grouping symbols to make true number sentences.

④ $6 \times 4 + 1 = 30$

⑤ $12 \div 3 \times 2 - 1 = 1$

⑥ $48 \div 6 + 5 \times 3 = 39$

⑦ $50 / 10 + 10 / 2 = 5$

Estimating with Fractions

Home Link 3-7

NAME DATE TIME

For Problems 1 and 2, circle the best estimate. Explain your estimation strategies to someone at home.

SRB 182

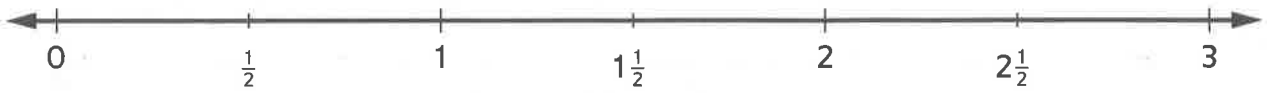
1. The sum of $\frac{3}{4}$ and $\frac{18}{19}$ is closest to _____.

   0 1 2

2. $2\frac{3}{8} - \frac{3}{4}$ is _____.

   less than 2 greater than 2

For Problems 3–5, refer to the number line below.



3. Henry ran $1\frac{5}{8}$ miles in the morning and $\frac{9}{10}$ mile in the afternoon. About how many miles did he run in all? Place an X on the number line to show your estimate.

4. Tia ran $2\frac{7}{8}$ miles. George ran $1\frac{1}{10}$ miles. About how many more miles did Tia run than George? Place a star on the number line to show your estimate.

5. Explain how you estimated the difference in Problem 4.

_____

_____

Practice

Use $V = B \times h$ or $V = l \times w \times h$ to solve.

6. What is the volume of a box that is 14 inches long, 7 inches wide, and 10 inches high?

   The volume of the box is

   _____ cubic inches.

   Number model:

   _____

7. The floor of Raj's classroom has an area of 525 feet. The ceiling is 12 feet high. What is the volume of Raj's classroom?

   The volume of the classroom is

   _____ ft^3.

   Number model:

   _____

Renaming Fractions

Home Link 3-8

NAME DATE TIME

You can make trades to find new names for mixed numbers and fractions greater than 1.

SRB 171-173

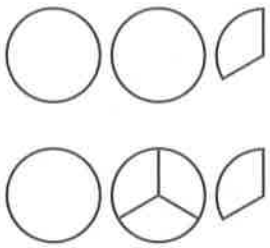
Example 1:

Start with $2\frac{1}{3}$.

Trade 1 whole for $\frac{3}{3}$.

Now you have 1 whole and 4 thirds, or $1\frac{4}{3}$.

Another name for $2\frac{1}{3}$ is $1\frac{4}{3}$.



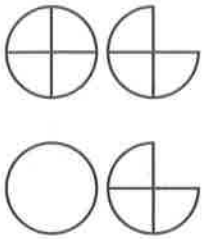
Example 2:

Start with $\frac{7}{4}$.

Trade $\frac{4}{4}$ for 1 whole.

Now you have 1 whole and 3 fourths, or $1\frac{3}{4}$.

Another name for $\frac{7}{4}$ is $1\frac{3}{4}$.

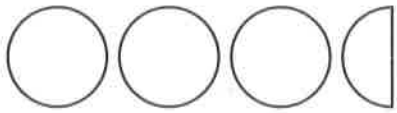


In Problems 1 and 2, find at least one more name for each fraction or mixed number. Do not change the denominator. Check that your trades were fair and record the trades you made. You can use the pictures to help you think about making trades.

① $3\frac{1}{2}$

Name: _____

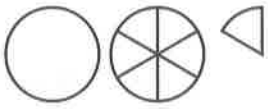
Trade: _____



② $1\frac{7}{6}$

Name: _____

Trade: _____



In Problems 3 and 4, cross out the fraction or mixed number that does **not** name the same number as the others in the group. You can draw pictures to help you.

③ $4\frac{1}{8}$ $\frac{33}{8}$ $3\frac{5}{8}$

④ $3\frac{6}{4}$ $1\frac{10}{4}$ $4\frac{2}{4}$

Practice

Make an estimate and solve. Use the back of the paper if you need more space.

⑤ Estimate: _____

$$\begin{array}{r} 289 \\ \times\ \ 13 \\ \hline \end{array}$$

⑥ Estimate: _____

$$\begin{array}{r} 72 \\ \times\ \ 9 \\ \hline \end{array}$$

Solving More Mixed-Number Stories

Home Link 3-9

NAME DATE TIME

SRB 178-185

For each story:

- Write a number model with a letter for the unknown.
- Make an estimate.
- Solve. You can use a drawing or number line to help.
- Use your estimate to check whether your answer makes sense.

(1) To make purple paint, Stephen mixed $1\frac{1}{4}$ gallons of red paint with $1\frac{3}{4}$ gallons of blue paint. How many gallons of purple paint did he make?

Number model: _____

Estimate: _____

Answer: _____ gallons

(2) Ethel had 4 feet of ribbon. She used $1\frac{1}{2}$ feet for a craft project. How many feet of ribbon does she have left?

Number model: _____

Estimate: _____

Answer: _____ feet

(3) A macaroni and cheese recipe calls for $1\frac{2}{3}$ cups of shredded cheddar cheese and $1\frac{2}{3}$ cups of shredded mozzarella cheese. How many cups of cheese are used in the recipe?

Number model: _____

Estimate: _____

Answer: _____ cups

Practice

Divide. Show your work on the back of the page.

(4) 6,125 ÷ 44 = ?

Estimate: _____

Answer: _____

(5) 2,967 ÷ 21 = ?

Estimate: _____

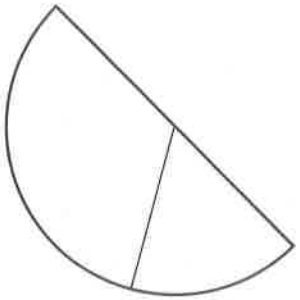
Answer: _____

Fraction Addition with Circle Pieces

Home Link 3-10

NAME DATE TIME

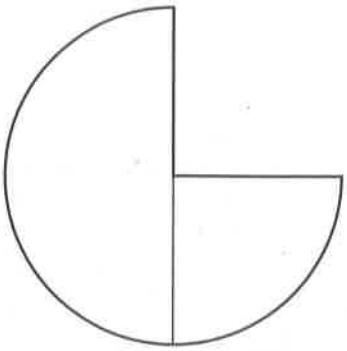
SRB 189



① **a.** These fraction circle pieces show $\frac{1}{3} + \frac{1}{6}$. Draw a line to show how you could use fraction circle pieces to change the problem to $\frac{2}{6} + \frac{1}{6}$.

b. Complete the number sentences.

$\frac{2}{6} + \frac{1}{6} =$ _____ $\frac{1}{3} + \frac{1}{6} =$ _____



② **a.** What fraction addition problem do these fraction circles show? _____

b. Draw a line to show how you could use the fraction circle pieces above to change the problem so that both fractions have the same denominator.

c. Complete the number sentences.

$\frac{\square}{4} + \frac{1}{4} =$ _____ $\frac{1}{2} + \frac{1}{4} =$ _____

③ Explain why it is easier to add fractions when they have the same denominator.

_____

_____

_____

Practice

Write an expression to model each situation.

④ Sandra picked 10 blue flowers and 16 red flowers. Then she divided the flowers equally into 2 bouquets. _____

⑤ A recipe called for $\frac{2}{3}$ cup flour. Kyle doubled the recipe. Then he added $\frac{1}{4}$ cup more flour to make the dough less sticky. _____

Playing *Fraction Capture*

Home Link 3-11

NAME DATE TIME

SRB 171-173, 305

① Cole was playing *Fraction Capture*. He recorded his addition expressions, but he forgot to write down the fractions he formed with his dice rolls.

Fill in the fraction column of Cole's record sheet with fractions he might have formed.

Round	Fraction	Fraction Addition Expression
1		$\frac{1}{2} + \frac{1}{2} + \frac{1}{5}$
2		$\frac{1}{2} + \frac{1}{3} + \frac{1}{6} + \frac{1}{2} + \frac{1}{3} + \frac{1}{6}$
3		$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$
4		$\frac{1}{6} + \frac{1}{6}$
5		$\frac{1}{2} + \frac{1}{3} + \frac{1}{2}$

② Mackenzie was playing *Fraction Capture* and rolled a 6 and a 2.

a. Write an addition expression to show fractions she could have captured if she used her dice rolls to form $\frac{2}{6}$.

_____

b. Write an addition expression to show fractions she could have captured if she used her dice rolls to form $\frac{6}{2}$.

_____

Practice

Write each of the fractions below as a division expression. Then write each fraction as a whole number or a mixed number.

③ $\frac{5}{4}$

Division expression: _____

Mixed or whole number: _____

④ $\frac{16}{8}$

Division expression: _____

Mixed or whole number: _____

⑤ $\frac{14}{3}$

Division expression: _____

Mixed or whole number: _____

⑥ $\frac{17}{12}$

Division expression: _____

Mixed or whole number: _____

Solving Fraction Number Stories

Home Link 3-12

NAME DATE TIME

SRB 30, 178-181

Solve each number story. Show your work and make sure your answer is clear.

1. Anton is training for a cross-country race. He ran $2\frac{2}{4}$ miles on Saturday and $3\frac{1}{4}$ miles on Sunday. How much farther did Anton run on Sunday? How do you know?

Answer: _____

_____

2. Nina had 9 apples to share with 5 of her friends. If all 6 people get an equal share, how many apples will each person get? How do you know?

Answer: _____

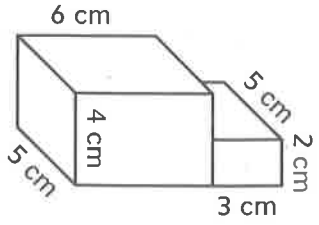
_____

3. Anna and Daniel are playing *Fraction Capture*. Anna is trying to find sections that add up to $\frac{3}{4}$. She knows that $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$, but she wants to earn an extra point for using a fraction with a different denominator. Write another number sentence Anna could use to show a sum of $\frac{3}{4}$.

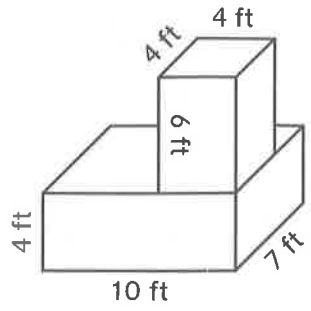
Answer: _____

Practice

Find the volume of each figure below.

4. 

Volume = _____

5. 

Volume = _____

Solving Fraction-Of Problems

Home Link 3-13

NAME DATE TIME

SRB 195

(1) What is $\frac{1}{2}$ of 24?

Answer: _____

(2) What is $\frac{1}{3}$ of 24?

Answer: _____

(3) What is $\frac{1}{4}$ of 24?

Answer: _____

(4) An animal shelter has 36 pets available for adoption. $\frac{1}{4}$ of them are puppies. How many are puppies?

_____ of the pets are puppies.

(5) A teacher had 20 ounces of water in her water bottle. She drank $\frac{1}{5}$ of the water. How many ounces did she drink?

She drank _____ ounces.

Practice

Make an estimate. Then divide. Write your remainder as a fraction. Use your estimate to check the reasonableness of your answer.

(6) 7,002 ÷ 53 = ?

Estimate: _____

Answer: _____

(7) 2,956 ÷ 67 = ?

Estimate: _____

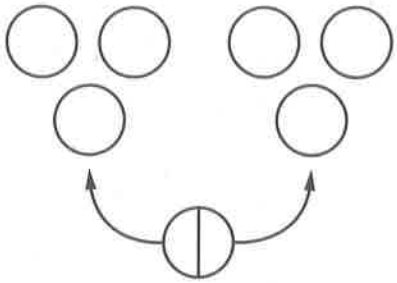
Answer: _____

Solving More Fraction-Of Problems

Home Link 3-14

NAME DATE TIME

In today's lesson you used drawings to solve fraction-of problems that do not have whole number answers. For example, you could find $\frac{1}{2}$ of 7 by drawing:



SRB 195-196

Today you used drawings to solve fraction-of problems that do not have whole number answers. For example, you could find $\frac{1}{2}$ of 7 by making a drawing like the one at the right.

① What is $\frac{1}{2}$ of 7?

② What is $\frac{1}{3}$ of 7?

③ What is $\frac{1}{4}$ of 7?

④ Kai had 15 yards of kite string. He had to cut off $\frac{1}{4}$ of it when his kite got stuck in a tree. How much string did he cut off?

He cut off _____ yards of string.

⑤ Joan made 3 quarts of soup. She ate $\frac{1}{7}$ of the soup each day for a week. How much soup did she eat each day?

She ate _____ quart of soup.

Practice

Make an estimate. Then multiply. Use U.S. traditional multiplication for at least one problem. Use your estimate to check the reasonableness of your answer. Show your work on the back.

⑥ $35 * 49 = ?$

Estimate: _____

Answer: _____

⑦ $209 * 63 = ?$

Estimate: _____

Answer: _____